Science GE DOK Alignment Chart **INQUIRY** **Grades 5-6** **GE 1-2**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Scientific Questioning): Students raise scientifically oriented questions that can be answered through observations, experimentation and/or research. At early stages, students learn how to develop investigable questions that guide their work. At later stages, students connect their questions to scientific ideas, concepts, and quantitative relationships that inform investigations.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2**	**S5-6:1** **(DOK 2)** **Students demonstrate their understanding of SCIENTIFIC QUESTIONING by** … • Distinguishing between **observational**, **experimental**, and **research questions (**e.g., Observational—How does a cricket chirp? Experimental—-Does the amount of light affect how a cricket chirps? Research—Do all crickets chirp? Why do crickets chirp?). **AND** • Identifying **multiple variables** that affect a system and using the variables to generate experimental questions that include cause and effect relationships.	
Enduring Knowledge: (Predicting and Hypothesizing): Scientists' explanations about what happens in the world come partly from what they observe and partly from what they think. Preliminary explanations are constructed with conceptual knowledge and propose a new level of understanding. At early stages, students think about what may happen during an investigation and justify their thinking. At later stages, students identify cause and effect relationships within an hypothesis and base predictions on factual evidence more than opinion.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2**	**S 5-6: 2** **(DOK 2)** **Students demonstrate their understanding of PREDICTING AND HYPOTHESIZING by…** • Using logical **inferences derived from evidence** to predict what may happen or be observed in the future. **AND** • Providing an explanation (**hypothesis**) that is reasonable in terms of available evidence.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 5-6** **GE 3-4**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Designing Experiments): Students design investigations that control variables, generate adequate data/observations to provide reasonable explanations, and can be reproduced by other scientists. At early stages, experimental design reflects what the experimenter will do to answer a question and ensure that a test is fair. At later stages, students design investigations that will produce the appropriate kinds of evidence to support or refute an hypothesis. Multiple trials or the collection of multiple data points are incorporated into the design and variables are controlled to ensure that the investigation is valid and reproducible.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 3**	**S5-6:3** **(DOK 3)** **Students demonstrate their understanding of EXPERIMENTAL DESIGN by…** •Writing a plan related to the question and prediction that includes: a. A list of materials needed that specifies quantities (e.g., 250 ml water). b. A procedure that lists significant steps sequentially and describes which variable will be manipulated or changed and which variables will remain the same **(“**Fair Test”). c. An appropriate format for recording data. d. A strategy for conducting multiple trials **(“**Fair Test”).	
Enduring Knowledge (Conducting Experiments): Students follow an experimental design and use scientific tools (including measurement tools) appropriately and accurately. At early stages, students are encouraged to pay close attention to their experimental plan and record data throughout an investigation. At later stages, students engage in extended investigations and use more sophisticated science tools including computers.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2** **DOK 2**	**S5-6:4** **(DOK 2)** **Students demonstrate their ability to CONDUCT EXPERIMENTS by…** • Choosing **appropriate measurements** for the task and measuring accurately. **AND** • Collecting data and recording accurate and complete data from **multiple trials**. **AND** • Drawing scientifically: a. Selecting an appropriate perspective (e.g., cross section, top view, side view) and recording precise proportions.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 5-6** **GE 5-6**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Enduring Knowledge (Representing Data and Analysis): Students represent data using text, charts, tables and graphs.		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 2** **DOK 2 (1)** **DOK 2 (1)**	**S5-6:5** **(DOK 2)** **Students demonstrate their ability to REPRESENT DATA by…** • Determining an appropriate representation (line graph in addition to prior examples) to represent their findings accurately. **AND** • Selecting a **scale** that is appropriate for range of data to be plotted, labeling units, and presenting data in an objective way. **AND** • Including clearly labeled keys and symbols, when necessary. **AND** • Using correct scientific terminology to label representations.	
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2** **DOK 3**	**S 5-6: 6** **(DOK 3)** **Students demonstrate their ability to ANALYZE DATA by…** • Identifying **relationships of variables** based upon evidence. **AND** • **Questioning data** that might not seem accurate or does not fit into the pattern of other findings.	

Science GE DOK Alignment Chart **INQUIRY** **Grades 5-6** **GE 7-8**

DOK & NECAP Release Item Codes	GE Statement with Ceiling DOK	Examples/Practice Items
Representing Data (continued)		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 2**	**S5-6:7** **(DOK 3)** **Students demonstrate their ability to EXPLAIN DATA by…** • Explaining data using correct scientific terminology **AND** • Using experimental results to support or refute original hypothesis. **AND** • Considering all data when developing an explanation/conclusion. **AND** • Identifying problems/flaws with the experimental design. **AND** • Using additional resources (e.g., books, journals, databases, interview, etc.) to strengthen an explanation. **AND** • Preparing a conclusion statement/summary.	
Enduring Knowledge (Applying Results): Students synthesize the results of an investigation by generating new questions related to the results of the investigation, stating a general rule regarding the understandings learned from the investigation, or applying the understandings learned to similar situations. At early stages, students make connections between classroom investigations and similar situations or experiences. At later stages, students recognize that different explanations can sometimes arise from the same evidence. Students demonstrate an ability to resist overgeneralization based on insufficient evidence and suggest the types of evidence that need to be gathered in order to better understand the focus of the investigation		
All Inquiry GEs are assessed at the state level (NECAP Science). **DOK 3**	**S5-6:8** **(DOK 3)** **Students demonstrate their ability to APPLY RESULTS by…** • Explaining how experimental findings can be **generalized** to other situations.	